

# 21<sup>st</sup> Century Space Launch Complex Architectures Overview French Trade Briefing

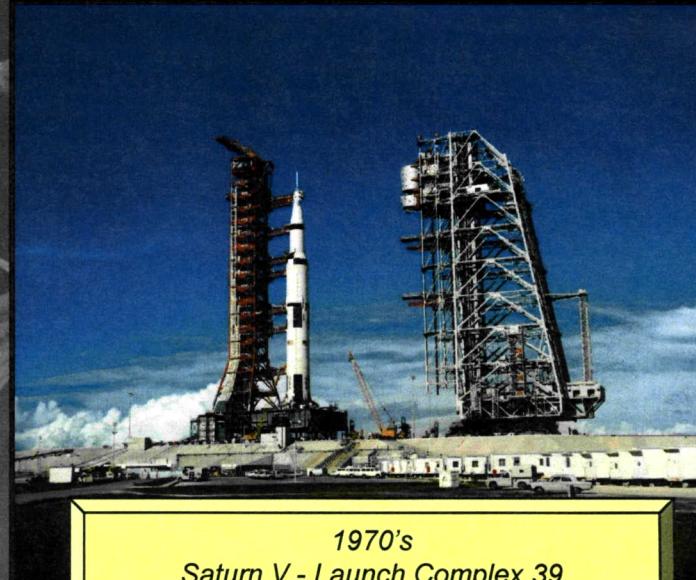
Scott Colloredo  
21 March 2011



# 21st Century Space Launch Complex Kennedy Space Center, 1950 - 2020



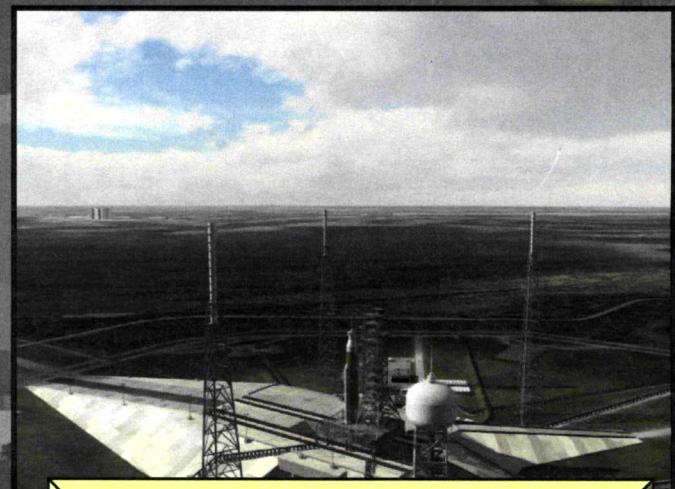
1950's  
ICBM Row



1970's  
Saturn V - Launch Complex 39



1980's - 2000's  
Space Shuttle - Launch Complex 39



2010's  
21st Century Space Launch Complex

# 21<sup>st</sup> Century Space Launch Complex

## *The Art of the Possible*

21<sup>ST</sup> CENTURY SPACE LAUNCH COMPLEX

Kennedy Space Center

May 2010



# 21<sup>st</sup> Century Space Launch Complex

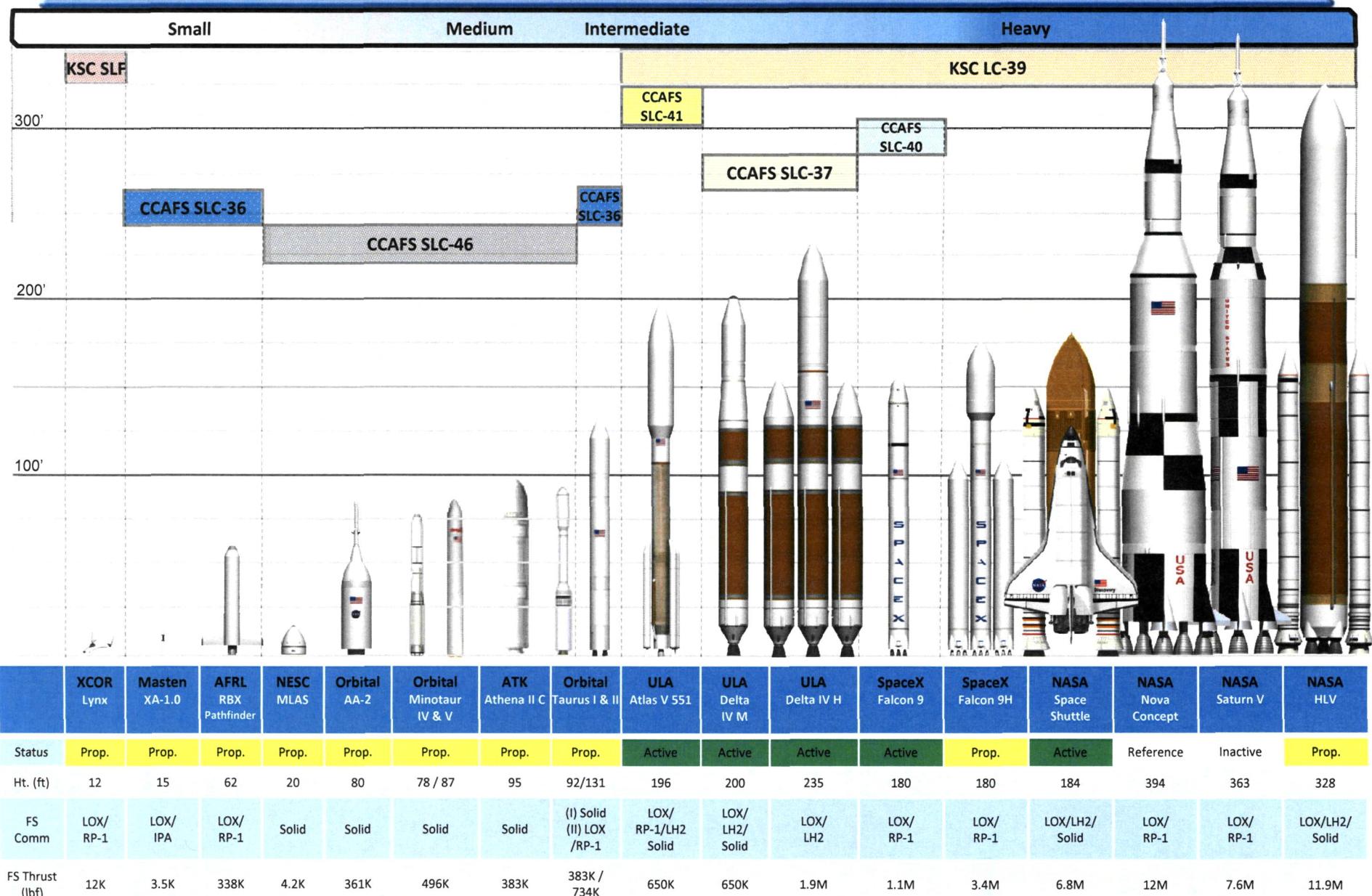
## A Notional Launch Manifest





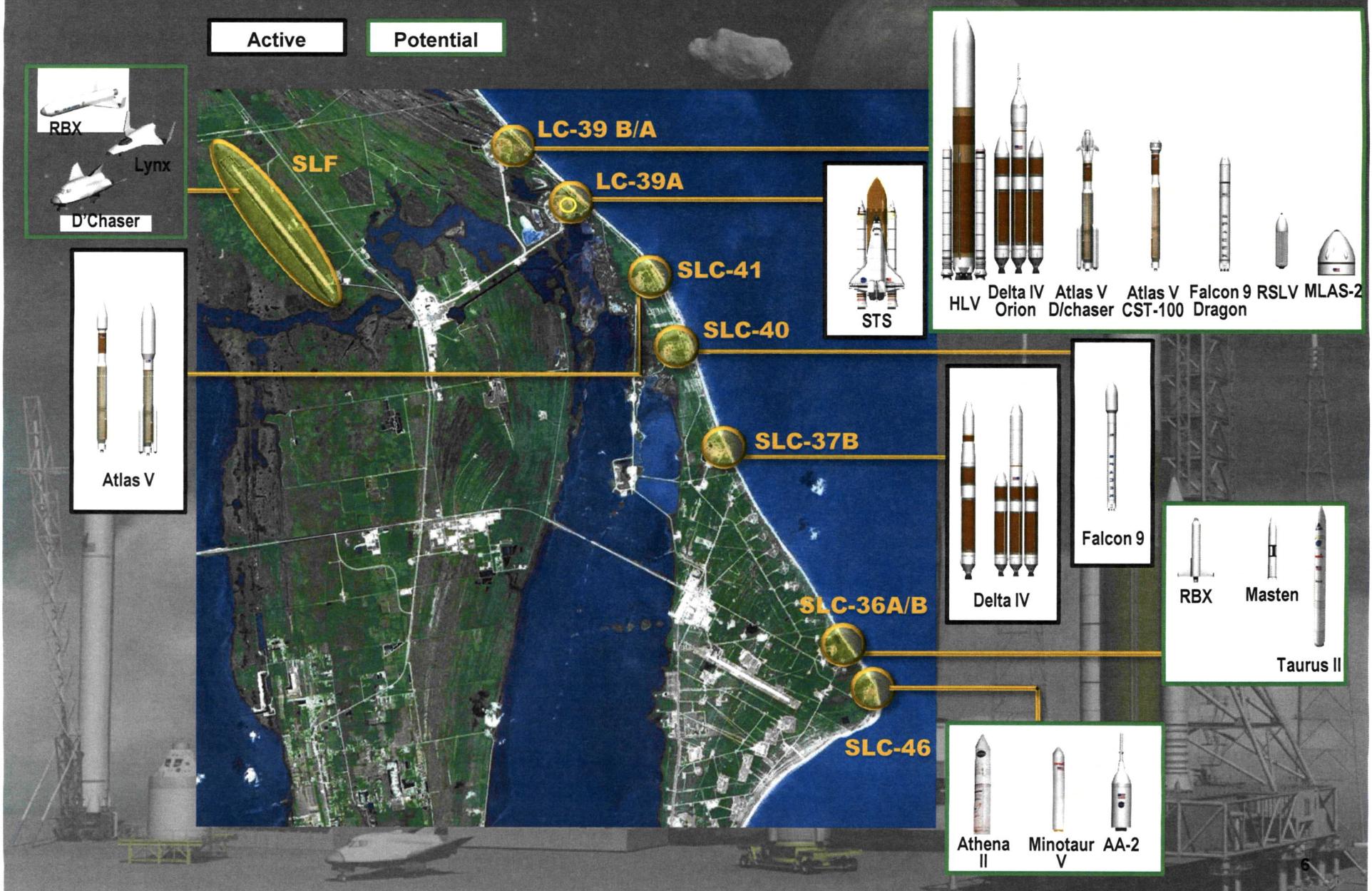
# 21<sup>st</sup> Century Space Launch Complex

## A Launch Capability for Every Vehicle



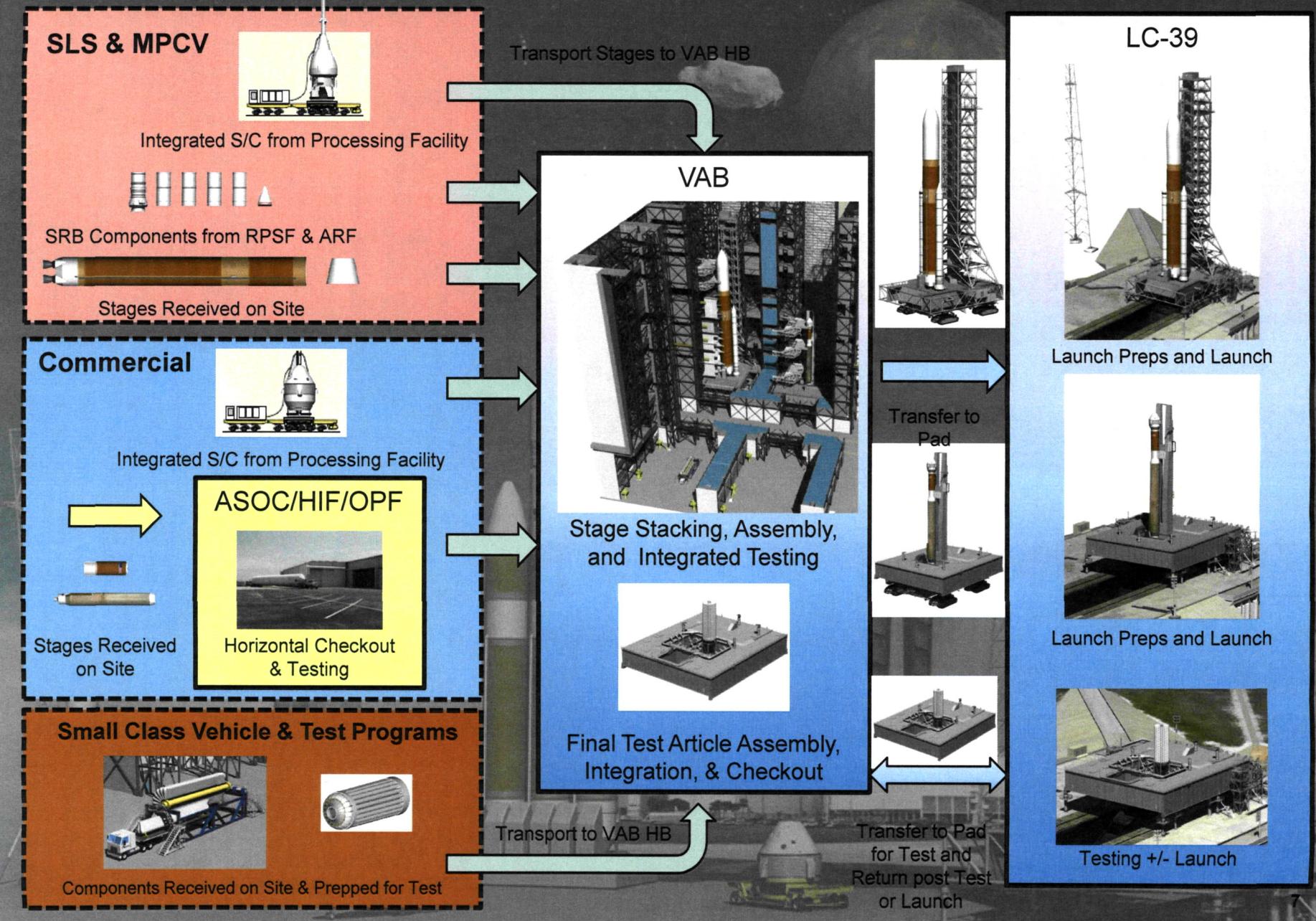
# 21<sup>st</sup> Century Space Launch Complex

## A Launch Site for Every Vehicle



# 21<sup>st</sup> Century Space Launch Complex

## Launch Complex 39 Concept of Operations

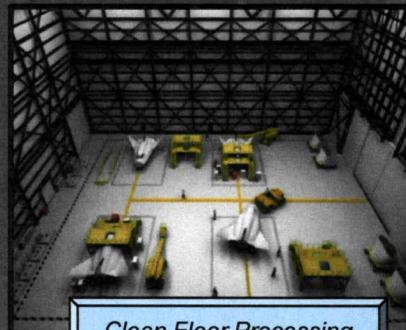


# 21<sup>st</sup> Century Space Launch Complex

## A Flexible Approach



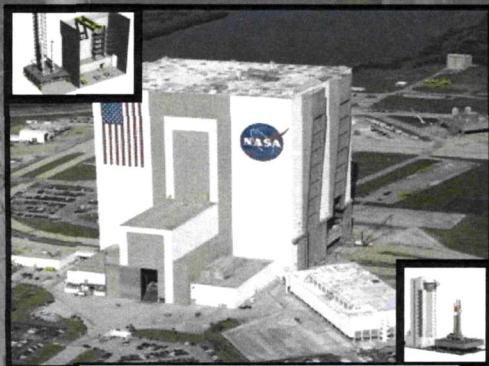
Horizontal Launch & Landing



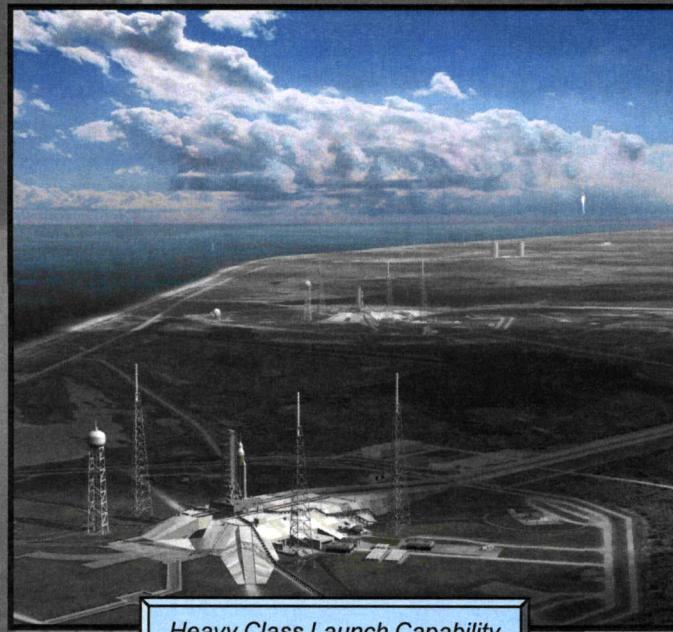
Clean Floor Processing



Small Vehicle Launch



Multi-Use Integration



Heavy Class Launch Capability



Flexible Launch Capability

# 21st Century Space Launch Complex Command & Control Strategy

## Welcome to the Florida Spaceport

Today is Tuesday April 14, 2020

Commercial Crew launch from Pad 39-B to ISS at 8:47 AM ON TIME

Mars Communications Satellite launch from Pad 41 at 1:13 PM ON TIME

Commercial satellite launch from Pad 37 at 6:35 PM ON TIME

Tomorrow April 15, 2020

Space Hotel passenger launch from Pad 39-A at 11:00 AM ON TIME

*Notice: Use of Virtual Reality sensory implants while traveling on Florida's Spaceport is illegal*



Enabling Capabilities Catalog

Support SLS\* Development & Test



\*Space Launch System (SLS)

Customer PAD-B GSE

Transform Launch Control to small projects that provide basic capability when needed

Commercial Provided Capability

Government Furnished Enablers

Common Infrastructure (Government Furnished)

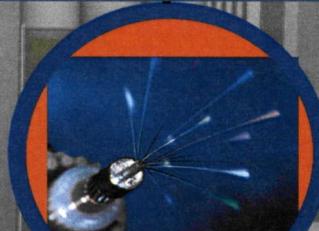
*Continual Process of reducing O&M Costs*

Unproven Technology

Payload Launch Experience

Critical Payload Launch Experience

Commercial Provider Maturity

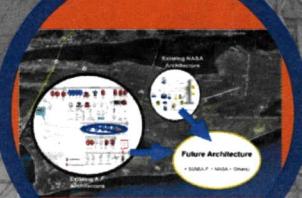


Integrated Network Services

Increased Range Capacity & Flexibility

Virtual Customer

Customer Brings own C&C



Government Core Capabilities for safety and risk mitigation

# 21<sup>st</sup> Century Space Launch Complex Summary

- ◆ **Features of a 21st Century Space Launch Complex**

- Flexibility to support evolving launch vehicles and spacecraft
- Standard interfaces to support multiple customer needs
- Enhanced Range capacity and flexibility
- Reconfigurable processing areas and control rooms
- Revitalized infrastructure

- ◆ **KSC is open for Business**

- Continuing to work with industry to better understand needs and potential requirements
- Gaining understanding of evolving requirements from Commercial Customers
- Implementing technologies to overcome constraints for flexible, multi-use concepts and cost sharing
- Collaborating with NASA, DoD and commercial Programs